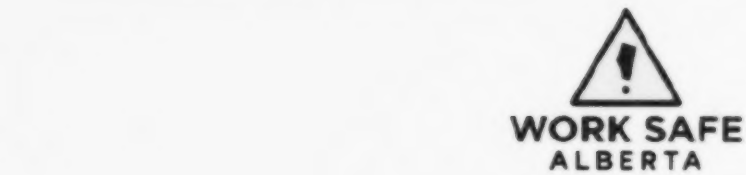
Occupational Fatalities in Alberta
1995 - 2004



Alberta
HUMAN RESOURCES AND EMPLOYMENT

the people & workplace department

Data Development and Evaluation
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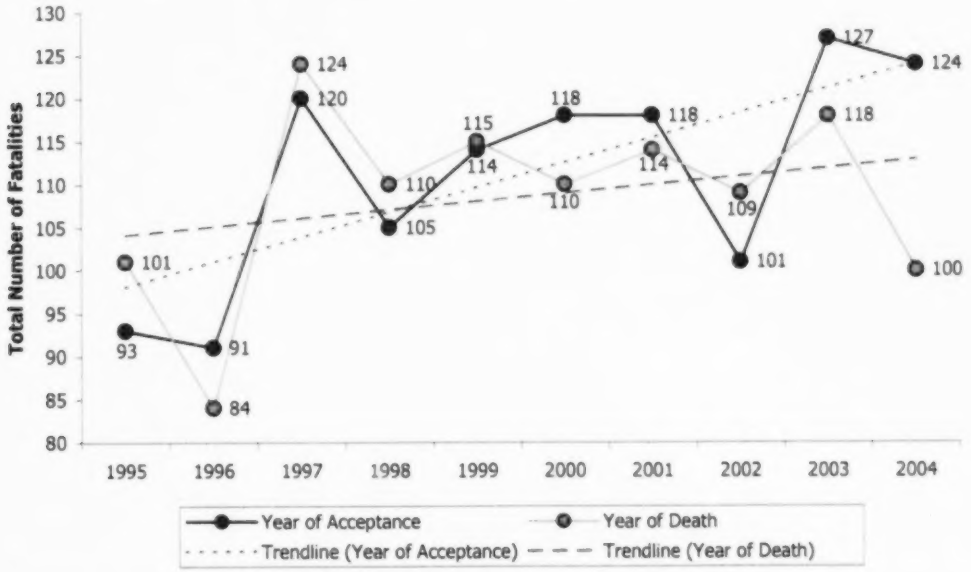
1. Introduction

This report provides a summary analysis of the occupational fatalities in Alberta during the last ten years. Between 1995 and 2004, the Workers' Compensation Board (WCB) – Alberta accepted 1,111 occupational fatalities for compensation. The highest one-year total occurred in 2003, when there were 127 fatalities accepted for compensation by the WCB (Chart 1.1).

Chart 1.1 Fatalities Accepted by the WCB – Alberta: 1995-2004[1]



Data Source: Workers' Compensation Board – Alberta, Prepared by Data Development and Evaluation

An "occupational fatality accepted by the WCB" is defined as the death of a worker resulting from a work-related incident or exposure, which was accepted by the WCB for compensation. Since some fatalities accepted in a particular year may actually have occurred in a prior year, the number of fatalities based on the year of acceptance may be different from those based on the year of occurrence. For example, although 1,111 fatalities were accepted by the WCB from 1995 to 2004, 1,085 fatalities actually occurred during this period (Chart 1.1).

However, the number of fatalities based on the year of death may be underestimated, as some fatalities that occurred in recent years may not be accepted by the WCB until a future date. Therefore, unless otherwise specified, analysis throughout this report is based on year of acceptance.

The data used in this analysis was obtained from the WCB for the years between 1995 and 2004. The analysis was mainly conducted using cross-tabulation, where the frequency and percentage distribution results were derived based on group characteristics.
This report consists of eight sections. Section 2 provides statistics on occupational fatalities by fatality type. Fatality rates for each type of fatality are discussed in Section 3, while Section 4 describes

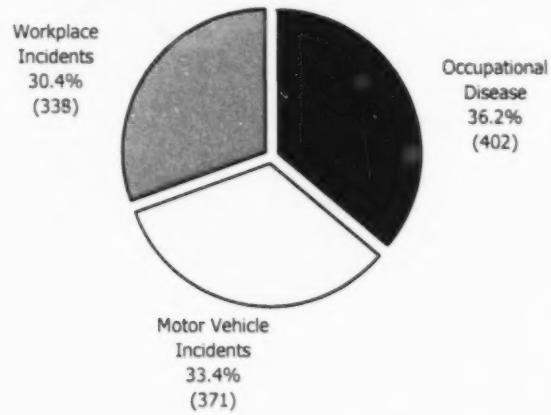
[1] Trend lines are used to graphically display trends in data. Trend lines used in this report are derived using linear regression and maximize the correlation between the data set and the line of best fit.

occupational fatalities by industry sector, and Section 5 presents occupational fatalities by individual industries. Sections 6, 7 and 8 examine motor vehicle incidents, workplace incidents and occupational disease fatalities respectively.

2. Occupational Fatalities by Type

The WCB classifies occupational fatalities into three general types: workplace incidents; motor vehicle incidents; and occupational disease. Beginning in 2004, all fatalities reported by Alberta Human Resources and Employment (AHRE) will be classified according to the WCB's classification guidelines. Therefore, data presented in this report may differ from the data presented in previous years.

Chart 2.1 Fatalities Accepted by the WCB, by Type – Alberta: 1995-2004



Data Source: Workers' Compensation Board – Alberta, Prepared by Data Development and Evaluation

Table 2.1 Fatalities Accepted by the WCB, by Type – Alberta: 1995-2004

Year	Motor Vehicle Incidents	%	Workplace Incidents	%	Occupational Disease	%	Total Fatalities
1995	42	45.2%	26	28.0%	25	26.9%	93
1996	33	36.3%	32	35.2%	26	28.6%	91
1997	49	40.8%	36	30.0%	35	29.2%	120
1998	37	35.2%	33	31.4%	35	33.3%	105
1999	33	28.9%	39	34.2%	42	36.8%	114
2000	30	25.4%	51	43.2%	37	31.4%	118
2001	40	33.9%	33	28.0%	45	38.1%	118
2002	29	28.7%	28	27.7%	44	43.6%	101
2003	44	34.6%	25	19.7%	58	45.7%	127
2004	34	27.4%	35	28.2%	55	44.4%	124
Total	**371**	**33.4%**	**338**	**30.4%**	**402**	**36.2%**	**1,111**

Data Source: Workers' Compensation Board – Alberta, Prepared by Data Development and Evaluation

Workplace Incidents

Workplace incidents consist of cases in which the worker died at a worksite or as a result of injuries sustained at a worksite. This is the type of fatality that AHRE typically investigates.

Between 1995 and 2004, 30.4% of the total fatalities were workplace incidents (Chart 2.1). Beginning in 2000, the percentage of fatalities due to workplace incidents has declined in every year except 2004. The year 2003 marked the lowest percent of fatalities due to workplace incidents in the last 10 years, when they accounted for 19.7% of all fatalities (Table 2.1).

Motor Vehicle Incidents

Motor vehicle incidents typically involve non-industrial vehicles operating on public roads, where the fatally injured worker was either the driver or the passenger. This type of occupational fatality includes cases involving aircraft, train, helicopter, and water vehicle incidents.

Between 1995 and 2004, 33.4% of all fatalities were motor vehicle incidents. In 2004, the WCB accepted 34 motor vehicle incident fatalities, a decrease of 22.7% from 2003.

Occupational Disease

Occupational disease fatalities consist mostly of recognized occupational disease, that is, disease known to be primarily or exclusively work-related (e.g. asbestosis and black lung disease). This category also includes heart attacks suffered on the job.

Between 1995 and 2004, 36.2% of all fatalities resulted from occupational diseases. In 2003 and 2004, there were 58 and 55 fatalities due to occupational diseases respectively, the two highest number of occupational disease fatality totals in the past 10 years.

Occupational diseases are frequently diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases, it is difficult to determine when the fatal exposure occurred. Work-related fatalities such as these typically occur long after the time of initial exposure. The occupational disease category, therefore, should not be used to interpret present worksite hazardous conditions or exposures.

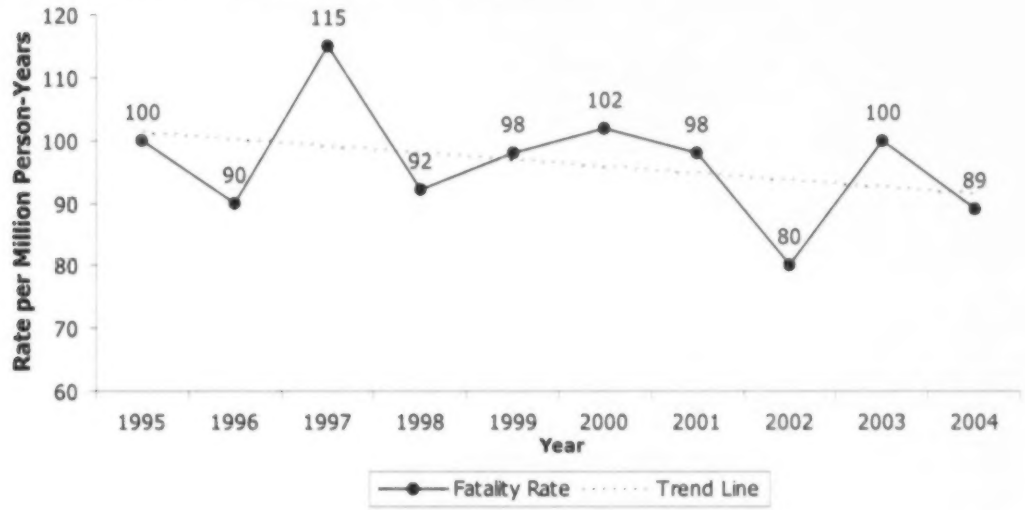
3. Fatality Rates by Type

The fatality rate is calculated by dividing the number of accepted fatalities in the year by the number of estimated person-years[2] in that year. The result is expressed as fatalities "per million person-years."

The fatality rate is not a reliable indicator of the present risk of work-related injury and disease, as the conditions resulting in the exposure to hazardous materials or disease may not be present at this time. This is especially true for fatalities due to occupational diseases. Chart 3.1 presents the fatality rate for the province as a whole. The fatality rates and fatality rate trend lines for each specific type of fatality are presented in Chart 3.2 and Chart 3.3 respectively.

Between 1995 and 2004, the overall provincial fatality rate varied from year to year. The fatality rate was lowest in 2002 at 80 per million person-years and was highest in 1997 at 115. The fatality rate in 2004 was 89 fatalities per million person-years, a decrease of 11.0% from 2003 (Chart 3.1).

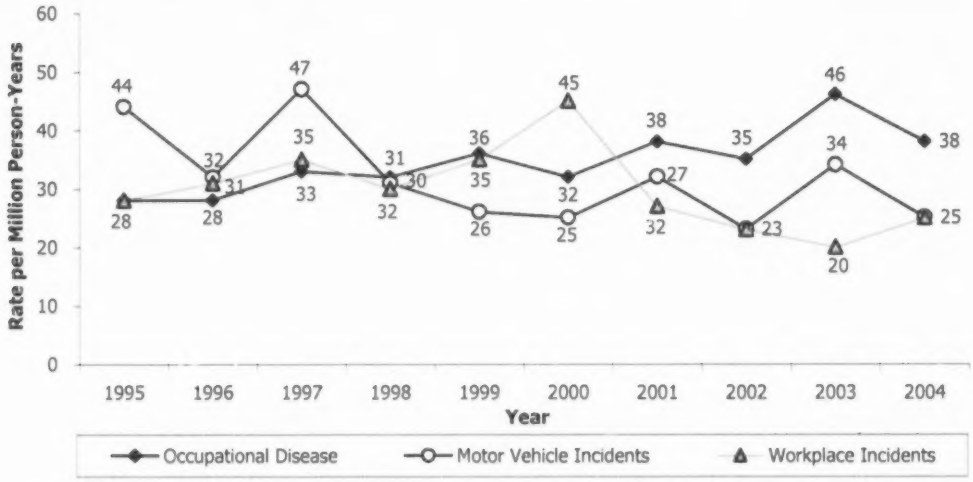
Chart 3.1 Provincial Fatality Rate – Alberta: 1995-2004



Data Source: Workers' Compensation Board – Alberta. Prepared by Data Development and Evaluation

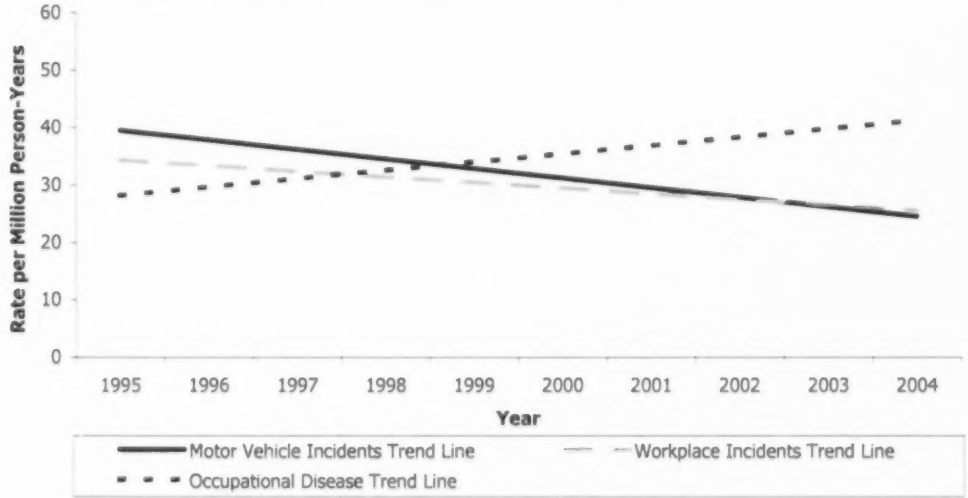
[2] Person-years are estimated from wage and payroll data provided by account holders to the WCB. One person-year is equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked.

Chart 3.2 Fatality Rate by Type – Alberta: 1995-2004



Data Source: Workers' Compensation Board – Alberta, Prepared by Data Development and Evaluation

Chart 3.3 Fatality Rate Trend Line by Type – Alberta: 1995-2004



Data Source: Workers' Compensation Board – Alberta, Prepared by Data Development and Evaluation

In 2000, the workplace incident fatality rate peaked at 45 fatalities per million person-years. Since 2000, this fatality rate has declined steadily, reaching a minimum of 20 fatalities per million person-years in 2003. In 2004, the workplace incident fatality rate increased to 25 fatalities per million person-years (Chart 3.2 and Chart 3.3).

The motor vehicle incident fatality rate varied from year to year between 1995 and 2004. In 2002 it reached its lowest level of 23 fatalities per million person-years. This rate increased to 34 in 2003 but has fallen to 25 fatalities per million person-years in 2004.

Over the past 10 years, occupational disease fatality rates have generally increased. However, in 2004, the occupational disease fatality rate fell to 38 fatalities per million person-years, after reaching a ten-year high of 46 in 2003.

4. Occupational Fatalities by Industry Sector

There are eight industry sectors covering 403 industries[3]. Fatality rates vary across different industry sectors, due to the different types of work activity performed in different sectors. Data for 1995 to 2004 was used to calculate the fatality rates in each sector by dividing the total number of accepted fatalities by the total number of person-years in that period.

Table 4.1 Occupational Fatality Rate by Industry Sector – Alberta: 1995-2004

Industry Sector	Total Fatalities	Fatality Rate
Agriculture and Forestry	26	246
Construction and Construction Trade Services	330	225
Transportation, Communication and Utilities	201	213
Mining and Petroleum Development	153	188
Manufacturing, Processing and Packaging	132	83
Retail and Wholesale	77	35
Public Administration, Education and Health Services	71	34
Business, Personal and Professional Services	42	21

Data Source: Workers' Compensation Board – Alberta, Prepared by Data Development and Evaluation
Note: Does not include fatalities under federal jurisdictions

The Agriculture and Forestry sector had the highest fatality rate at 246 fatalities per million person-years (Table 4.1). This was 2.6 times the provincial rate of 96 per million person-years. However, use caution in considering the fatality rate for Agriculture and Forestry. Most of the industries in this sector do not have workers' compensation coverage, so the person-years and accepted fatalities may be underestimated[4]. Reported fatality rates might be more reliable for sectors where a majority of industries have workers' compensation coverage.

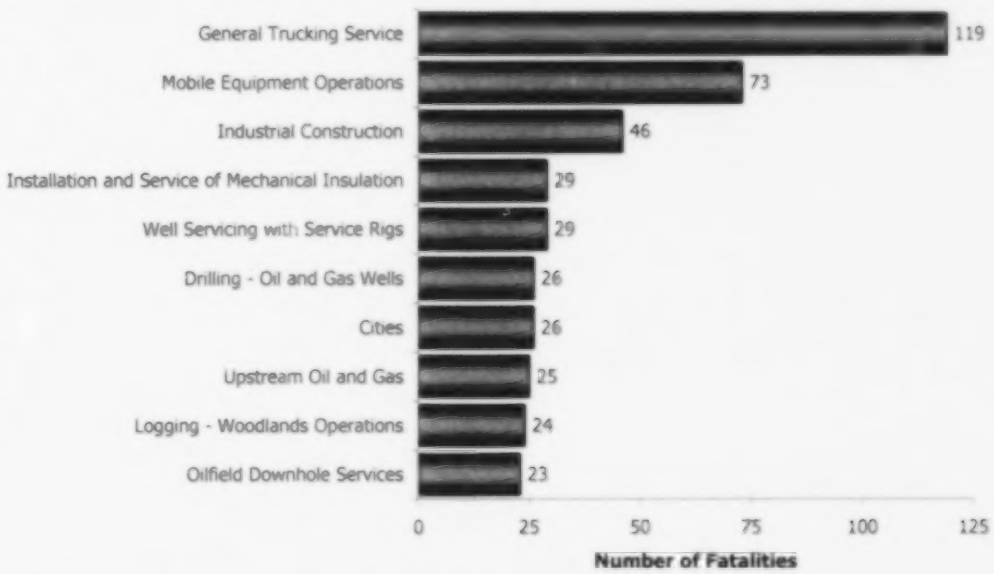
Construction and Construction Trade Services, Transportation, Communication and Utilities, and Mining and Petroleum Development sectors all had occupational fatality rates higher than the provincial rate. Public Administration, Education and Health Services, Retail and Wholesale Trade Services, Business, Personal and Professional Services, and Manufacturing, Processing and Packaging sectors had fatality rates lower than the provincial rate (Table 4.1).

[3] There are nine industry sectors as classified by the WCB. The Public Administration, Education and Health Services sector is divided into the Municipal Government, Education and Health Services sector and the Provincial Government sector.
[4] For comprehensive statistics relating to fatalities occurring on Alberta's farms, visit http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/aet5237?OpenDocument

5. Occupational Fatalities by Industry

For occupational fatalities by industry, ten industries accounted for 420 (37.8%) of the 1,111 fatalities between 1995 and 2004. The General Trucking Service industry had 119 fatalities, the highest of any single industry, followed by Mobile Equipment operations with 73 fatalities (Chart 5.1).

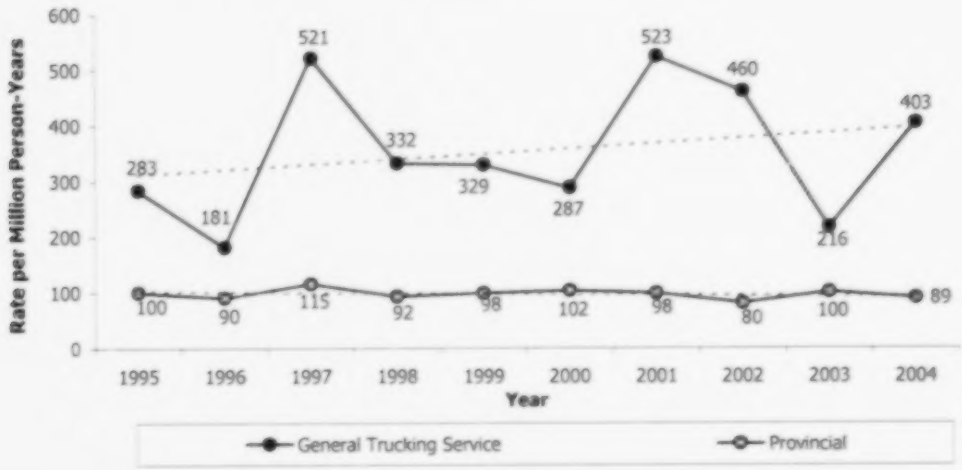
Chart 5.1 Fatalities Accepted by the WCB by Top Ten Industries – Alberta: 1995-2004



Data Source: Workers' Compensation Board – Alberta. Prepared by Data Development and Evaluation

Fatality rates for the General Trucking Service industry varied from year to year between 1995 and 2004, and were higher than the provincial rate each year. In 2004, the rate increased to 403 fatalities per million person-years, which was more than four-times the provincial average (Chart 5.2).

Chart 5.2 General Trucking Service Fatality Rates – Alberta: 1995-2004



Data Source: Workers' Compensation Board - Alberta. Prepared by Data Development and Evaluation

Between 1995 and 2004, General Trucking Service industry fatalities were predominantly motor vehicle incidents, accounting for 65.5% of fatalities within the industry (Table 5.1).

Table 5.1 General Trucking Service Fatalities by Type – Alberta: 1995-2004

Year	Motor Vehicle Incident	Workplace Incident	Occupational Disease	Total Number of Fatalities
1995	6	1	0	7
1996	3	2	0	5
1997	12	2	2	16
1998	8	2	1	11
1999	4	5	2	11
2000	6	4	0	10
2001	13	4	2	19
2002	6	3	8	17
2003	7	0	1	8
2004	13	1	1	15
Total	**78** (65.5%)	**24** (20.2%)	**17** (14.3%)	**119**

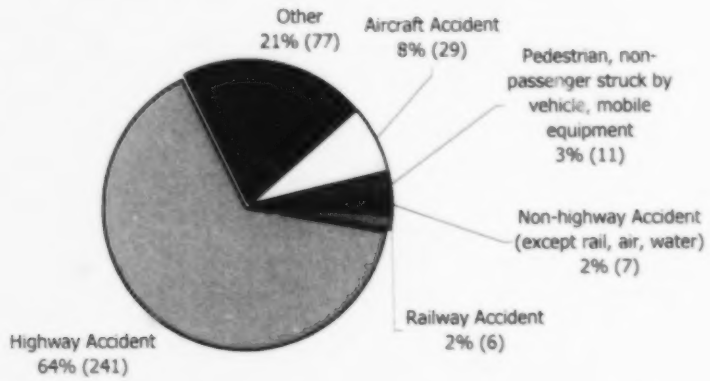
Data Source: Workers' Compensation Board - Alberta. Prepared by Data Development and Evaluation

6. Motor Vehicle Incidents

Motor Vehicle Incident Fatalities by Type of Event

Between 1995 and 2004, nearly two-thirds of motor vehicle incident fatalities were a result of highway incidents[5]. Aircraft incidents accounted for 8% of the total motor vehicle incident fatalities (Chart 6.1).

Chart 6.1 Motor Vehicle Incident Fatalities by Type of Event – Alberta: 1995-2004



Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation

Motor vehicle incident fatalities only include cases involving non-industrial vehicles. Occupational fatalities involving industrial vehicles are classified as workplace incidents. Therefore, the number of motor vehicle incident fatalities may not fully reflect the occupational fatalities related to motor vehicles.

Between 1995 and 2004, the number of highway occupational fatalities varied from year to year (Chart 6.2). In 1995, there were 32 highway occupational fatalities, the highest number of deaths in the ten-year reporting period; 2002 had the lowest number, with 17. Highway occupational fatalities are a small portion of all highway fatalities in Alberta. Chart 6.2 compares the number of highway motor vehicle incident occupational fatalities with the number of overall provincial highway fatalities.

[5] Highway incidents include incidents to vehicle occupants occurring on that part of the public highway, street, or road normally used for travel, as well as the shoulder and surrounding areas, telephone poles, bridge abutments, trees aligning roadway, etc. Incidents occurring entirely off the highway, street, off road, or on industrial, commercial, or farm premises or parking lots are considered to be non-highway incidents.

Chart 6.2 Highway Occupational Fatalities and Overall Provincial Highway Fatalities – Alberta: 1995-2004[6]

Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation
Alberta Traffic Collision Facts - Alberta Infrastructure and Transportation

Motor Vehicle Incident Fatalities by Industry

Between 1995 and 2004, 21% of motor vehicle incident fatalities occurred in the General Trucking Service industry (Table 6.1), although the number varied from year to year. In both 2001 and 2004, there were 13 motor vehicle incident fatalities in the General Trucking Service industry, the highest number in any year of the reporting period. The lowest number of General Trucking Service motor vehicle incident fatalities was recorded in 1996, with three (Chart 6.3).

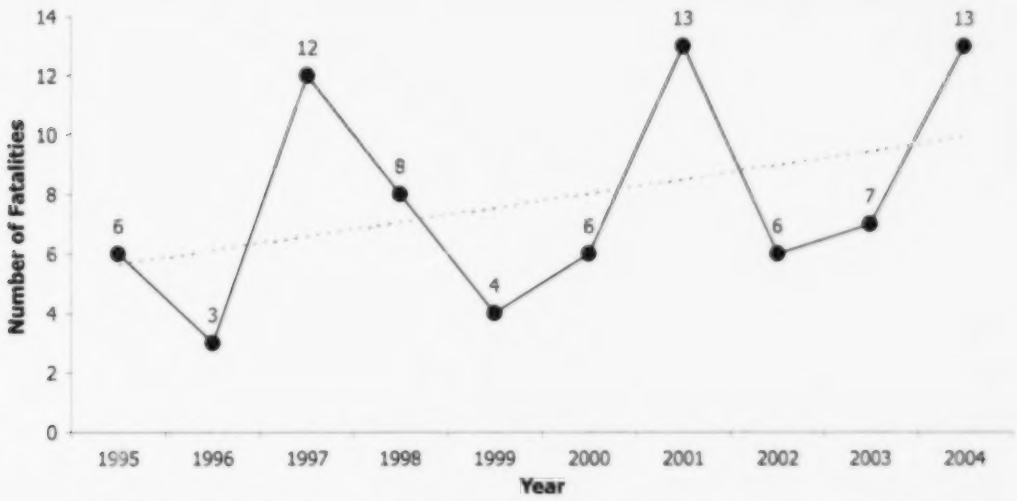
Table 6.1 Motor Vehicle Incident Fatalities by Industry – Alberta: 1995-2004

Industry	Number of Fatalities	%
General Trucking Service	78	21.0%
Mobile Equipment Operations	30	8.1%
Well Servicing with Service Rigs	17	4.6%
Upstream Oil and Gas	16	4.3%
Oilfield Downhole Services	12	3.2%
Other	218	58.8%
Total	**371**	**100.0%**

Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation

[6] The provincial collision statistics for 2004 are not available until the late summer of 2005. Additional collision statistics can be found at http://www.trans.gov.ab.ca/Publications/CollisionStats.asp.

Chart 6.3 General Trucking Service Motor Vehicle Incident Fatalities – Alberta: 1995-2004



Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation

Motor Vehicle Incident Fatalities by Age Group

Between 1995 and 2004, 52.3% of all motor vehicle incident fatalities in Alberta involved workers aged 25-44 years old. Workers aged 45 years and older accounted for 32.9% of motor vehicle fatalities while workers aged 15-24 years were involved in 14.6% of motor vehicle incident fatalities. Table 6.2 below provides details of the motor vehicle incident fatalities by age group from 1995 to 2004.

Table 6.2 Motor Vehicle Incident Fatalities by Age Group – Alberta: 1995-2004

Age Group	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
15-24 Years	6	6	7	6	4	5	7	2	6	5	54
25-44 Years	23	18	24	19	23	17	19	15	18	18	194
45 Years and Older	13	9	18	12	6	8	14	12	19	11	122
Unspecified	0	0	0	0	0	0	0	0	1	0	1
Total	**42**	**33**	**49**	**37**	**33**	**30**	**40**	**29**	**44**	**34**	**371**

Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation

7. Workplace Incidents

Workplace Incident Fatalities by Type of Event

Between 1995 and 2004, the three primary types of event that caused workplace incident fatalities: contact with objects and equipment; falls; and transportation accidents[7].

Over one-third of workplace incident fatalities were due to contact with objects and equipment, whereas falls accounted for 14.8% of workplace incident fatalities, and transportation incidents accounted for 13.6% (Table 7.1).

Table 7.1 Workplace Incident Fatalities by Type of Event – Alberta: 1995-2004

Type of Event or Exposure	Number of Fatalities	%
Contact with Objects and Equipment	114	33.7%
Struck by Objects	*70*	*20.7%*
Caught in Objects	*40*	*11.8%*
Struck Against Objects	*4*	*1.2%*
Falls	50	14.8%
Fall to Lower Level	*38*	*11.2%*
Fall on Same Level	*10*	*3.0%*
Other Falls	*2*	*0.6%*
Transportation Accidents	46	13.6%
Exposure to Harmful Substances	32	9.5%
Fires and Explosions	24	7.1%
Assaults and Violent Acts	16	4.7%
Assaults/Violent Acts by Persons	*11*	*3.3%*
Other Assaults/Violent Acts	*5*	*1.5%*
Overexertion	1	0.3%
Unknown	55	16.3%
Total	**338**	**100.0%**

Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation

[7] Transportation accidents include all events that involve transportation vehicles, industrial vehicles, or powered mobile industrial equipment. Motor vehicle incidents that were discussed in the previous section are transportation incidents that involve non-industrial vehicles and are not included in these totals.

Workplace Incident Fatalities by Industry

Table 7.2 shows the six industries with the highest number of workplace incident fatalities between 1995 and 2004. These six industries accounted for nearly one third of the workplace incident fatalities accepted by the WCB in the past ten years.

Table 7.2 Workplace Incident Fatalities by Industry – Alberta: 1995-2004

Industry	Number of Fatalities	%
Mobile Equipment Operations	37	10.9%
General Trucking Service	24	7.1%
Drilling - Oil and Gas Wells	20	5.9%
Logging - Woodlands Operations	11	3.3%
Well Servicing with Service Rigs	10	3.0%
Pipeline Construction	10	3.0%
Other	226	66.9%
Total	**338**	**100.0%**

Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation

Workplace Incident Fatalities by Age Group

Between 1995 and 2004, 50.9% of all workplace incident fatalities in Alberta involved workers aged 25-44 years old. Workers aged 45 years and older accounted for 33.7% of workplace incident fatalities while workers aged 15-24 years were involved in 14.8% of workplace incident fatalities. Table 7.3 below provides details of the workplace incident fatalities by age group from 1995 to 2004.

Table 7.3 Workplace Incident Fatalities by Age Group – Alberta: 1995-2004

Age Group	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
15-24 Years	4	6	6	3	7	8	2	4	2	8	50
25-44 Years	13	18	20	21	15	30	16	14	10	15	172
45 Years and Older	9	8	10	9	17	12	14	10	13	12	114
Unspecified	0	0	0	0	0	1	1	0	0	0	2
Total	**26**	**32**	**36**	**33**	**39**	**51**	**33**	**28**	**25**	**35**	**338**

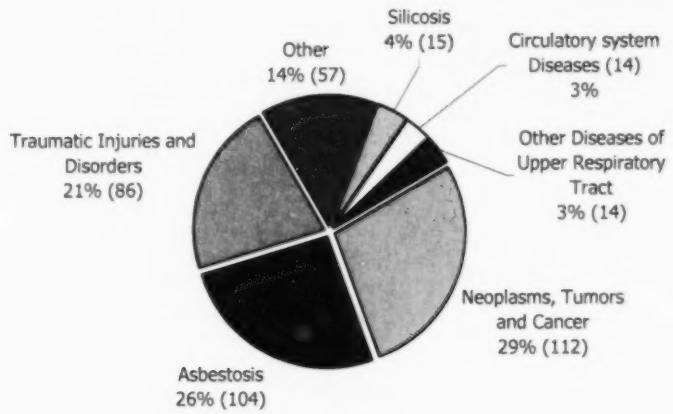
Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation

8. Occupational Disease

Occupational Disease Fatalities by Disease Type

Between 1995 and 2004, neoplasms, tumors, and cancer, and asbestosis were the two leading types of disease that resulted in occupational disease fatalities (Chart 8.1). Neoplasms, tumors, and cancer accounted for 29% of occupational disease fatalities, while asbestosis accounted for 26%.

Chart 8.1 Occupational Disease Fatalities by Disease Type – Alberta: 1995-2004

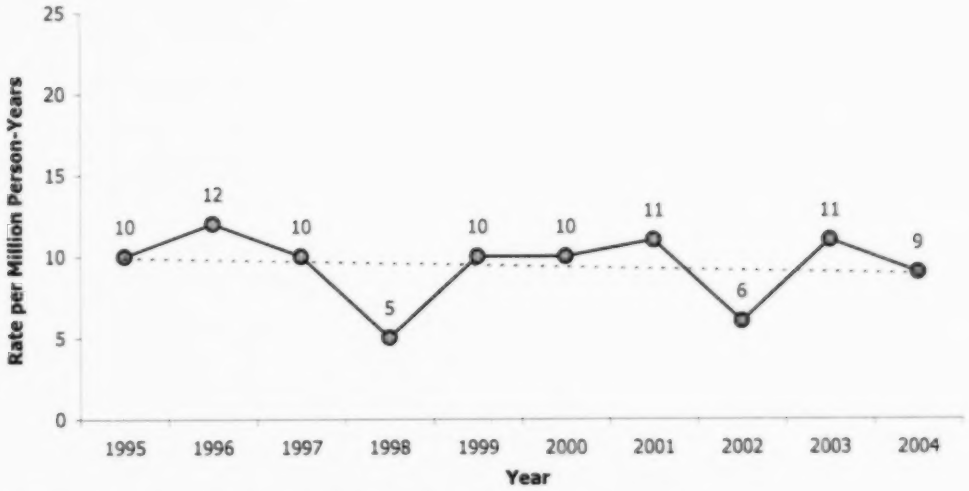


Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation

The fatality rates for asbestosis and neoplasms, tumors, and cancer varied between 1995 and 2004. The fatality rate for asbestosis has shown a slightly downward trend over the ten-year period while the fatality rate for neoplasms, tumors and cancer has experienced an upward trend (Chart 8.2 and Chart 8.3).

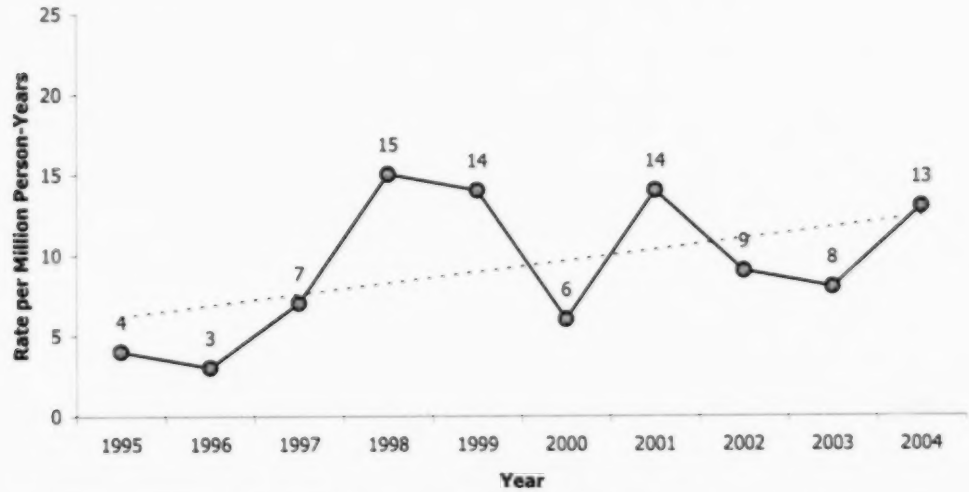
There were 12 asbestosis-related fatalities accepted by the WCB in 2004, down from 14 in 2003. The number of accepted fatalities related to neoplasms, tumors and cancer in 2004 was 18, up from 10 in 2003. Note that fatalities due to occupational diseases should be interpreted with particular caution, as fatalities that occurred in one year may not be accepted until several years later. The fatality statistics presented in this report are based on the year of acceptance by the WCB.

Chart 8.2 Asbestosis Fatality Rate – Alberta: 1995-2004



Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation
Note: Fatalities occurring under Government of Canada jurisdiction are excluded from the calculation of the fatality rates

Chart 8.3 Neoplasms, Tumors, and Cancer Fatality Rate – Alberta: 1995-2004



Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation
Note: Fatalities occurring under Government of Canada jurisdiction are excluded from the calculation of the fatality rates

Occupational Disease Fatalities by Industry

Table 8.1 Occupational Disease Fatalities by Industry – Alberta: 1995-2004

Industry	Number of Fatalities	%
Industrial Construction	37	9.2%
Mechanical Insulation	28	7.0%
Cities[8]	20	5.0%
General Trucking Service	17	4.2%
Mechanical Contracting	14	3.5%
Other	286	71.1%
Total	**402**	**100.0%**

Data Source: Workers' Compensation Board - Alberta, Prepared by Data Development and Evaluation

Between 1995 and 2004, Industrial Construction and Mechanical Insulation were the two leading industries with occupational disease fatalities (Table 8.1). Together, both industries accounted for 16.2% of total occupational disease fatalities in Alberta between 1995 and 2004.

[8] This industry includes urban municipalities incorporated as cities under the Municipal Government Act.